

CLAIM AMENDMENTS

1. (Currently Amended) A lamp comprising:

an illuminant section having an illuminant for ~~irradiating a~~ radiating light, ~~whose the light having a size is determined by an arc length and a direction of, wherein the arc length is equal to a direction of~~ has a direction aligned with an optical axis of the lamp;

a lamp reflector ~~whose having a~~ having a parabolic focus ~~is equal to~~ located at a center point of the illuminant in the illuminant section, for reflecting, as a parallel light flux, parallel to the optical axis, a light flux ~~irradiated~~ radiated from the center point of the illuminant section, by ~~the~~ a paraboloid of revolution surface developed around the optical axis and directed toward a forward direction of the optical axis; and

a lamp front glass having ~~a plate-shaped~~ an incident plane and ~~a plate-shaped~~ an outgoing plane, for receiving the parallel light flux from the lamp reflector through the incident plane and outputting the parallel light flux through the outgoing plane, wherein

the paraboloid of revolution surface of the lamp reflector is ~~formed by a~~ deformation of an aspherical reflection surface ~~which is in symmetry of rotation~~ rotationally symmetrical with respect to the optical axis, and

at least one of the incident plane and the outgoing plane of the lamp front glass is ~~formed by a~~ deformation of an aspherical lens surface ~~which is in symmetry of rotation~~ rotationally symmetrical with respect to the optical axis, and

the light ~~flux~~ is collimated ~~to~~ into the parallel light flux traveling from the illuminant ~~toward its irradiation direction~~ by applying corresponding power ~~which is different in light flux in order~~ to control a distribution of a divergent angle at the outgoing plane of the lamp front glass.

2. (Currently Amended) The lamp according to claim 1, ~~wherein including~~ a circular area ~~where there is no outgoing light~~ around the optical axis on the outgoing plane of the lamp front glass through which no outgoing light passes, ~~which being~~ generated when the light ~~irradiated~~ radiated by the illuminant ~~is~~ reflected by the paraboloid of revolution is reduced by the reflection ~~of~~ from the aspheric reflection surface and a lens function of the aspheric lens surface.

3. (Currently Amended) The lamp according to claim 1, wherein ~~the flux of the~~ outgoing light ~~is~~ output through the outgoing surface of the lamp front glass ~~so that the divergent~~ has a divergence angle of the outgoing light flux that becomes constant at an optional point on the outgoing plane ~~becomes constant~~.

4. (Currently Amended) A polarizing conversion optical system comprising:
the lamp according to claim 1;
a lens array comprising a plurality of lenses arranged ~~in array~~ for condensing ~~outgoing lights~~ the light from the lamp; and

a polarization conversion element comprising a plurality of polarizing beam splitters arranged ~~in array placed~~ near a lens focus of the lens array, for outputting ~~the flux of the outgoing lights~~ light output from the lamp front glass after orthogonal polarized components ~~included in~~ of the outgoing lights light are ~~coincided to~~ made coincident with each other.

5. (Currently Amended) A condensing optical system comprising:
the lamp according to claim 1;
a condenser lens group for condensing ~~outgoing lights~~ the light from the lamp ~~into~~ at a lens focus; and

a rod integrator for receiving ~~its~~ at an incident plane the light condensed at the lens focus and outputting the ~~flux of the lights~~ light through ~~its~~ an outgoing surface after repeated ~~operations of a total internal reflection at a side surface of~~ the light within the rod integrator.

6. (Currently Amended) An image display device comprising:
the polarization converting optical system according to claim 4;
an optical modulation element for receiving incident ~~lights~~ light from the polarization converting optical system, ~~giving them~~ modulating the incident light with image information, and outputting the light flux modulated with the image information;

an integrator optical system for overlapping and outputting the light output flux from the polarization converting optical system to the incident surface of the ~~photo~~ optical modulation element;

a projecting optical system for projecting the light flux modulated with the image information and transmitted from the ~~photo~~ optical modulation element; and

a screen for receiving the light flux modulated with the image information and projected by the projecting optical system, and displaying ~~the~~ an image based on the light flux modulated with the image information.

7. (Currently Amended) An image display device
the condensing optical system according to claim 5;
a relay optical system for relaying ~~lights~~ light from the condensing optical system;
an optical modulation element for ~~giving image information~~ modulating the lights light relayed by the relay optical system with image information, and for outputting the ~~lights~~ light modulated with the image information;

a projecting optical system for projecting the ~~lights~~ light modulated with the image information from the optical modulation element; and

a screen for receiving the ~~lights~~ light modulated with the image information and projected by the projecting optical system, and for displaying ~~the an~~ image based on the image information.